Teacher Information
Forecasting

I. OBJECTIVES

A. Forming Concepts (Introductory) Objectives

1. Draw examples of common weather map symbols.
2. Define common weather terms.
3. Explain weather systems.

B. Interpreting Data Objectives

1. Interpret maps of sea level pressure and isobars.
2. Draw cloud positions based on pressure maps.
3. Interpret maps of temperature and temperature isotherm lines.
4. Interpret maps of wind speed and direction.
5. Interpret GOES maps of cloud cover over the northern hemisphere not including Alaska nor Hawaii.

C. Applying Principles Objectives

1. Forecast the position of clouds three days from today.
2. Relate temperature maps to pressure maps.
3. Relate pressure maps to wind maps.
4. Relate wind chill to wind and temperature maps.

II. Interdisciplinary Uses

A. Social Studies

1. Describe how various professions (fishing, farming, roofing, etc.) are affected by accurate and inaccurate forecasting.

B. Math

1. Interpret graphical data.
2. Calculate wind chill given the formula and wind speed.

C. Language Arts

1. Create written and oral communications about accurate and inaccurate forecasting.
2. Describe in writing what a wind barb looks like.
3. Write a five day weather forecast.

III. Science Standards Coordination

The Forecasting Activity has been designed to incorporate science standards as specified by the National Science Education Standards (NSES) and the National Science Teachers Association (NSTA) Scope, Sequence, and Coordination (SS&C) of Secondary School Science. Only the major topics are listed. For Further explanation of each standard see the complete documents:

NSES-National Academy Press, 2101 Constitution Ave, NW, Washington, DC 20481
NSTA - 1840 Wilson Blvd, Arlington, VA 22201-3000

NSES	SS&C
structure of earth systems	water cycle
earth in the solar system	precipitation
transfer of energy	wind
understanding about science and tech	sun as an energy source
science and technology in society	water

IV. Advanced Preparation

A. Materials

1. One computer per three or four students
2. One copy of the student activity book for each student or group of students
3. You will need a color or grayscale capable printer.
   To save class time, have a student or aide ready to copy the pages downloaded from some of the sites.

B. Time required to complete the activity

1. Get Info takes about 25 minutes.
2. Gather Data takes about 25 minutes.
3. Applying Principles takes about 30 minutes.

C. Teacher Familiarity

Preview these materials thoroughly. As with all these activities, before using this activity in class, review the sites and work through the activity yourself to learn about forecasting so you can answer questions or direct the students to the answers.

The activity is set up so the students are taken to sites containing information that will be used to answer questions regarding forecasting. The sites contain either the answers or the information from which the students can infer the answers. At the end of the activity, there is a list of enrichment activities and related web sites.

D. Select questions for students to answer.

It would be prudent for you to read the questions students will be expected to answer. These questions are in order of ascending difficulty. Depending on grade level and ability level, you might want to assign specific questions for your students.

E. Student Grouping

These activities can be done individually or in small groups of up to four students. They can also be done at home for extra credit by students who are on-line at home.

F. Software Requirements and Duplication Preparation

1. Download Adobe Acrobat viewer for your platform (Mac or PC).
2. Download this instructor manual and the student activity book pages from the USA Forecasting introductory page.
3. Duplicate and distribute student pages. Each student should have a copy of the student activity book. Ideally, the student activity book should be distributed and discussed the day before the activity.